



*Training Course:
Wastewater Treatment Plant (WWTP) Operations*

*20 - 24 October 2024
Manama (Bahrain)
Fraser Suites*

Training Course: Wastewater Treatment Plant (WWTP) Operations

Training Course code: EW235565 From: 20 - 24 October 2024 Venue: Manama (Bahrain) - Fraser Suites Training Course
Fees: 5100 € Euro

Introduction

This program is designed for operators at wastewater treatment plants WWTP. It aims to equip participants with the knowledge and skills necessary for effective operation, maintenance, and troubleshooting of WWTP processes. Operators will learn about the core principles of wastewater treatment, operational practices, safety standards, and regulatory compliance. The training will also focus on hands-on skills for routine and emergency operations within the plant.

Target Audience

- Current and aspiring WWTP operators
- Plant supervisors and support staff involved in operations
- Technicians responsible for maintaining equipment in wastewater facilities

Objectives

- Understand the key processes and stages in wastewater treatment.
- Gain knowledge about health and safety standards in WWTP.
- Learn how to operate, monitor, and maintain equipment used in WWTP.
- Understand the regulations and compliance related to wastewater treatment.
- Develop troubleshooting and problem-solving skills for common WWTP operational issues.

Training Program Outline

Day 1: Introduction to Wastewater Treatment Processes

- Overview of Wastewater Treatment Systems
 - Introduction to WWTP components: Inlet works, primary treatment, secondary treatment, and tertiary processes.
 - Basic understanding of the water cycle and its relevance to WWTP.
- Types of Wastewater Domestic, Industrial
 - Characteristics of wastewater and contaminants e.g., BOD, TSS, nutrients.
 - Impacts of different types of waste on treatment processes.
- Key Regulatory Standards and Guidelines
 - Environmental regulations and permits for wastewater discharge.
 - Understanding the impact of compliance on operations.

Day 2: Preliminary and Primary Treatment

- Screening, Grit Removal, and Flow Measurement
 - Equipment overview: Screens, grit chambers, and flow meters.
 - Importance of screening and grit removal in protecting downstream equipment.
- Sedimentation and Primary Clarification
 - Principles of sedimentation: Primary clarifiers and settling tanks.
 - Factors affecting settling performance and removal efficiency.
- Routine Maintenance for Preliminary/Primary Treatment Equipment
 - Best practices for routine checks and maintenance tasks.
 - Safety procedures for handling equipment in preliminary treatment.

Day 3: Secondary Treatment and Biological Processes

- Introduction to Biological Treatment
 - Principles of biological treatment: Activated sludge, trickling filters, and lagoons.
 - Microbial role in treating wastewater: Aerobic and anaerobic processes.
- Operating Activated Sludge Systems
 - Key parameters to monitor: DO, MLSS, F/M ratio.
 - Adjusting aeration rates, sludge return, and wasting rates.
- Secondary Clarification and Sludge Management
 - Operation of secondary clarifiers.
 - Introduction to sludge handling: Thickening, digestion, and disposal.

Day 4: Tertiary Treatment and Disinfection

- Advanced Treatment Techniques
 - Filtration, chemical treatment e.g., coagulation, flocculation.
 - Membrane technologies e.g., microfiltration, ultrafiltration.
- Disinfection Techniques
 - Chlorination, UV disinfection, ozonation.
 - Ensuring pathogen removal and compliance with effluent standards.
- Troubleshooting Common Operational Issues
 - Identifying and solving problems related to secondary and tertiary processes.
 - Case studies and real-world examples of operational challenges.

Day 5: Operation, Maintenance, and Safety in WWTP

- Preventative Maintenance Programs
 - Developing and implementing preventative maintenance schedules.
 - Common tools and technologies for maintenance management.
- Health, Safety, and Emergency Response
 - WWTP-specific safety hazards and protective measures.
 - Emergency response plans for plant shutdowns, spills, or equipment failure.
- Review and Assessment
 - Recap of key topics covered during the week.

- Practical assessment hands-on of operators' skills in equipment operation and safety procedures.
- Final Q&A session with feedback and discussions.

Registration form on the Training Course: Wastewater Treatment Plant (WWTP) Operations

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